

Examining Epistemic Cognition in Argumentation and Critical Thinking: A Hermeneutic Study of Islamic Theological Texts

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Abstract

The article aimed to elucidate how the discussions on cognitions about epistemic matters in argumentation and critical thinking, which are 21st-century skills, were carried out in classical Islamic texts through a hermeneutical study of the works of classical Islamic texts. Theoretical samples were employed from chapters from two prominent theological books in Islamic scholastic theology (Ilmul kalam); the chapter named Nalar (cognition) and Aadabul jadal (etiquettes of argument) from Al kafiyatthu fil jadal by Imam Juvaini, the chapter of Asbaabul ilm (reasons of knowledge) from Kitab annasafiyya by Imam Saad al-taftazani, texts of the Quran, and hadiths of Prophet Muhammed. This research is grounded in the theoretical framework of the AIR model of epistemic cognition developed by Chinn et al. in 2014.

The author performed data analysis in three stages. The hermeneutic study started with an initial reading of the classical theological texts of Imam al Juvaini and Saad Al taftazani. First, A thorough analysis of the parts of the texts discussing argumentation and critical thinking in the theoretical samples was done. In the second stage, statements similar to the AIR model's components were extrapolated. In the third stage, patterns of meaning units reflecting the AIR model's components emerged. These patterns were interpreted to gain a new understanding of the components of the AIR Model in classical Islamic theological texts. The endeavour to understand the epistemic interpretation of argumentation and critical thinking in classical Islamic texts has broad implications in epistemic cognition research. Classical texts can formulate theories and interventions to enhance these skills in the contemporary scenario.

Keywords: Epistemic cognition, AIR Model, Hermeneutic study, classical Islamic text

Introduction

Argumentation refers to the dynamic social process between at least two individuals who exchange their points of view to understand each other. (Kuhn et al., 2014) Argumentative reasoning is indispensable for the successful working of democratic machinery and academic excellence. (Kuhn, 2008; Newell et al., 2011) Common core state standards in the United States underline the importance of solid argument skills in reading and writing. (Common Core State Standards Initiative, 2010) CT skills are one of the life skills that students must acquire, according to the Partnership for 21st Century Skills. (Miterianifa, 2021; Lai, 2011; Saavedra & Opfer, 2012) According to Lai, 2011, CT skills are the ability of students to analyse arguments, make a comprehensive conclusion utilising reasoning, examine decisions, and solve problems. (Lai, 2011) A study on 11th-grade students who participated in evidence-based, argumentative discourse activities showed that the participants developed a more robust epistemological understanding of science due to sustained argumentation. (Iordanou & Constantinou, 2015) National US data indicates that only 5 per cent of twelfth graders can comprehend arguments at a sophisticated level. (National Assessment of Educational Progress, 2013)

Research shows epistemic cognition predicts multiple academic outcomes of 21st-century learning skills such as argumentation and critical thinking (Greene & Yu, 2015). Critical thinking refers to the deliberate reflection on complicated issues and determining what to do or believe when confronted with such problems, considering multiple relevant contexts (Ennis, 1987). Epistemic cognition refers to cognitive processing related to the achievements of sophisticated epistemic ends; epistemic ends include knowledge, understanding, avoidance of false beliefs, and wisdom (Chinn et al., 2014). Epistemic cognition involves dispositions, ideas, and skills regarding how people decide what they truly know versus what they believe and distrust (Greene & Yu, 2015). Epistemic cognition and argumentation are essential to scientific reasoning (Wei et al., 2021). People, directly and indirectly, enact epistemic cognition throughout their lives. The challenges of the modern world necessitate future generations to know why and how in addition to merely what (Greene & Yu, 2015). For example, compared with people who are taught only about what argumentation and critical thinking are, people who understand how and why argumentation and critical thinking work can better examine differing claims about different argumentative topics.

According to some literature, argumentation and epistemic cognition im-

ply similar inner meanings to be almost similar. (Greene et al., 2016) Epistemic cognition works as an influencing factor in argumentative reasoning; the more sophisticated epistemic cognition supports better argumentative reasoning skills (effective production and evaluation of different arguments) (Mason & Scirica, 2006; Nussbaum et al., 2008; M. Weinstock, 2011; M. P. Weinstock, 2005). Sophisticated epistemic cognition is a prerequisite for excelling in multiple-perspective argumentative tasks. (Bråten et al., 2011, 2014) Argumentation is often considered a part of epistemic cognition enhancing interventions. (Herrenkohl & Cornelius, 2013).

The significance of sophisticated epistemic cognition in Islam

The priority of each believer in Islam should be to obtain sophisticated epistemic cognition in every domain, as contemplation using senses is considered mandatory in Islam. Even though this contemplation primarily intends to attain the cognition about the existence of Almighty God, the complex set of cognition that we employ in the world, whether those cognitions are related to worldly affairs or supernatural divinity, must be sophisticated to know Allah in most whole. The discoveries of science, demystifying the most spectacular mysteries in the world, are indeed boosting agency for our epistemic cognition.

Islam has undeniably proven the significance of actively engaging in deep epistemic cognition using the outer and inner senses about the creator and his magnificent creatures. The Quran asks humankind to engage in epistemic cognition about the world to understand the mysteries behind its design. “Observe how variously we explain the signs and evidence in the world so that they may understand.” انظُرْ كَيْفَ نُصَرِّفُ الْآيَاتِ لَعَلَّهُمْ يَفْقَهُونَ (Quran, 2013). The repeated encouragement of the Quran to keenly observe the world around them indicates engaging in sophisticated epistemic cognition; proper comprehension cannot result from faulty epistemic cognition of the world. God’s command to observe and comprehend things encourages a believer to adopt sophisticated epistemic cognition.

Epistemic cognition research has not seen momentum based on Islamic knowledge and cognition practices to date. There is a dearth of analysis of Islamic texts in light of the AIR model of epistemic cognition. Studies using a qualitative hermeneutical approach can give us rich details of Islamic scholars’ epistemic interpretation of argumentation and critical thinking in classical Islamic texts.

The AIR Model of Epistemic Cognition

The AIR model of epistemic cognition proposed by Chinn and colleagues

contains three components.

Epistemic aims and values

The first component of the AIR Model refers to an individual's aims and the values they assign to different aims. For example, an individual believes that depending on multiple readings of authentic scholars in the faith and science domains can assist in rectifying some people's false notion that science and faith cannot go hand in hand. Here, the individual may be motivated by the aim of reaching the truth of whether science and faith can go together or not. This aim has practical value because he wants a harmonious relationship between science and faith.

Another example is an atheist scientist who misinterprets religious texts and presents distorted information to undermine the ideas of the faith, regardless of the truth of the matter. The latter example represents the nonepistemic aim and value. Nonepistemic aims are not intended for cognitive processing goals such as truth, understanding, and avoidance of false belief. Some of the nonepistemic aims are listed below:

- ▶ Garnering social prestige
- ▶ Justifying one's cultural ideas (whether true or not) and undermining other ideas (Cognitions derived from Ingroup bias)
- ▶ Avoiding mental and physical effort and finish the task as soon as possible (overlooking the authenticity of the cognitive processing at hand) (Chinn, 2014).

Epistemic ideals

The second component of the AIR Model is the epistemic ideal, which is the property or standards an individual employs to examine whether epistemic ends have been obtained. For example, Scientists employ the ideal, such as a better fit with the evidence and other previous theories, as the property to evaluate how sophisticated an explanation is. An individual who excessively believes in superstitions, even if the scientific or religious evidence opposes them, may believe that sound cognitive processing should invoke the approval of some pharisaic (a hypocritically pious leader).

- ▶ A good cognition should explain a broad scope of evidence
- ▶ It should be internally consistent
- ▶ Coherent with scientific explanations published in high-impact factor peer-reviewed journals (Chinn, 2014).

Reliable and unreliable processes

The third component of the AIR Model involves the schemas that specify

the reliable processes by which sophisticated epistemic ends are generated. A reliable process produces relatively credible actual knowledge and understanding, and an unreliable process, by contrast, has a relatively low proportion of true knowledge and understanding. For example, an individual meticulously reviewing literature on a scientific concept to produce a research paper is a reliable process for producing a credible scientific research paper. An individual's neighbour frequently underestimates the explanations of people belonging to other cultures, which exemplifies the epistemic vice of being closed-mindedness. The use of epistemic vice is an unreliable process for producing true knowledge or understanding.

Some of the reliable processes are listed below:

- ▶ Epistemic virtues like open-mindedness and honesty tend to produce sophisticated epistemic ends (Zagzebski, 1996).
- ▶ Positive emotions like curiosity can motivate individuals to engage in effortful cognitive processing to find epistemic ends, and negative emotions like anger or frustration can cloud cognitive processing and do not produce sophisticated epistemic ends (Thagard, 2012).
- ▶ Considering alternative options and sources while engaging in a debate is a reliable process for reaching a sophisticated epistemic end (Solomon, 2001).

Methods

An interpretive paradigm was used in the present research using a hermeneutic approach informed by the research of Manen, 1997. The hermeneutical approach was chosen as a convenient design for analysing Islamic texts as it enables us to interpret the meanings of texts. Hermeneutics refers to the theory and practice of interpreting texts, objects, and concepts (Dyer, 2010). Understanding the epistemic interpretation of 21st-century skills like argumentation and critical thinking in classical Islamic texts can assist in formulating theories and interventions by bridging the insights implied in those texts and contemporary psychological theories to enhance these skills in the contemporary scenario.

Sampling

The present qualitative work employed theoretical samples from two chapters from two prominent theological books in Islamic scholastic theology (Ilmul kalam); the chapter named Nalar (cognition) from *Al kafiyatthu fil jadal* by Imam Juvaini, the chapter of *asbaabul ilm* (reasons of knowledge) from *Kitab annasafiyya* by Imam saad al-taftazani, texts of the Quran, and hadiths of Prophet Muhammed for the analysis in the light of the AIR model of epistemic cognition developed by Chinn, 2014 To examine how the discussions on cognitions about epistemic matters in

argumentation and critical thinking were carried out.

Data analysis

The author performed data analysis of Islamic classical texts in the light of the AIR model of epistemic cognition. Data analysis was conducted in three stages. The hermeneutic reading begins with an initial reading of classical theological texts consisting of Imam al Juvaini, Saad Al taftazani, and the Quran and hadiths. In the first, A thorough analysis of the parts of the texts discussing argumentation and critical thinking in the theoretical samples was done. In the second stage, the statements similar to the AIR model's components were extrapolated and entered into a computer by reading the texts several times. In the third stage, after repeated analysis of texts, patterns of meaning units reflecting the components of the AIR Model of epistemic cognition emerge. These patterns are interpreted to gain a new understanding of the components of the AIR Model in classical Islamic theological texts.

Rigor

The investigator meticulously endeavoured to maintain “Hermeneutic alertness.” (Manen, 1997, p. 48) By repeated reflections on the meanings of texts rather than accepting classical texts at face value.

Results and Discussions Epistemic aims and values

Kitab fil jadal deserves attention, because the text extensively discusses the different facets and etiquettes of argument. Imam Juvaini says:

ان موضوع الجدل لا يقتصر على مسائل الشرعيات ومعانيها، وان الجدل أسلوب تصحيح لكل وضع فاسد يتنازع فيه خصمان

“the topic of argument and discussion is not limited to issues of sharia and their meanings, and argument is a method of rectifying every corrupt situation in which two opponents dispute.” (AL-Juvaini, n.d.). This indicates that the epistemic aim revolves around rectifying every corrupt argument, and rectifications are not limited to religious issues.

A believer's moral prick of conscience when he illicitly employs a nonepistemic aim through engaging in conversation with others alerts him not to prioritise the nonepistemic aims and values over epistemic aims and values because the thought that the almighty has been observing his heart keeps him engaged in epistemic aims and values. As Prophet (SA) says:

إِنَّ اللَّهَ لَا يَنْظُرُ إِلَى أَسْبَابِكُمْ، وَلَا إِلَى صُورِكُمْ، وَلَكِنْ يَنْظُرُ إِلَى قُلُوبِكُمْ وَأَعْمَالِكُمْ

“He will not look at the outer appearance and forms of you, but his surveillance would be deep inside your

hearts and deeds.” (HadeethEnc, 2022). Quran says: *يَعْلَمُ خَائِنَةَ الْأَعْيُنِ وَمَا تُخْفِي*

الصُّورُ (Allah knows what the eyes hide and what the hearts conceal) (Quranksu, 2013a). The verses mentioned above from the Quran and Hadith generate conscious alertness in the believer's mind as he tries to refine his inner intentions while engaging in any possible cognitive processing.

Let us imagine a situation where epistemic and nonepistemic aims interact in a single action. We can analyze this situation through science and Islamic theology philosophy perspectives. For example, during a political debate in a classroom, a student simultaneously intends to find out the truth of the matter of discussion, and he also intends to garner social prestige, so he uses formal vocabulary. In this particular situation, according to Islam, even though he is giving more importance to the epistemic aim, a little tinge of the nonepistemic aim of garnering social prestige may subvert the excellent intention (Niyyah Swaliha). Whatever action or behaviour is done with even a little nonepistemic aim, like garnering social prestige, is considered forbidden in Islam. Prophet says:

إِنَّمَا الْأَعْمَالُ بِالنِّيَّاتِ، وَإِنَّمَا لِكُلِّ امْرِئٍ مَا نَوَى، فَمَنْ كَانَتْ هِجْرَتُهُ إِلَى اللَّهِ وَرَسُولِهِ فَهَجْرَتُهُ إِلَى اللَّهِ وَرَسُولِهِ، وَمَنْ كَانَتْ هِجْرَتُهُ لِدُنْيَا يُصِيبُهَا أَوْ امْرَأَةٍ يَنْكِحُهَا فَهَجْرَتُهُ إِلَى مَا هَاجَرَ إِلَيْهِ

(The actions of every human being are judged by motives (Niyyah), so everyone will obtain what he intended by his action. If his migration was to Allah and His messenger, his migration is to God and his prophet. If his migration was for acquiring some worldly things or for a partner he might marry, his migration is to that for which he intends to migrate) (Dorarnet, n.d.-a). Imam Juvaini criticises the argumentation practices involving nonepistemic aims like garnering social prestige while articulating basic etiquettes during epistemic argumentation, employing the holy Quran's evidence.

ثم من الجدل ما يكون محمودا مرضيا، ومنه ما يكون مذموما محرما، فالمنموم منه ما يكون لدفع الحق، أو تحقيق العناد، أو بلبس الحق بالباطل، أو لا يطلب به تعرف ولا تقرب، أو للممارة وطلب الجاه والتقدم الى غير ذلك من الوجوه المنهي عنها، وهي التي نص الله في كتابه على تحريمه

(Argumentations can be commendable and reprehensible with Allah based on some factors. Reprehensible arguments are the ones that are purportedly directed at the opponent to oppress the truth, strengthen the enmity further, not intended to strengthen the closeness with the opponent or garner social prestige and so on that are forbidden in Islam) (AL-Juvaini, n.d.). Allah criticises this kind of reprehensible argument in the Quran: (They only confront you with

arguments. Instead they are people who are disputers) (Qurankusu, 2013b).

This verse indicates the extent to which Allah contempts those who argue only for a nonepistemic aim, not for an intellectual epistemic aim, by attributing a negative term for those people, ‘Qasimoon’ in Arabic, which means the disputers. Prophet said:

قال عليه السلام: دع المراء وان كنت محقا

(refrain from an argument even if you are right in your view) (Dorarnet, n.d.-b). This hadith sheds light on the crucial etiquette to imbibe before we engage in an exchange of ideas. Imam Ghazali explains the term ‘al-mirah’ in the abovementioned hadith:

هو كل اعتراض على كلام الغير بإظهار خلل فيه، إما في اللفظ، وإما في المعنى، وإما في قصد المتكلم. وترك المراء بترك الإنكار والاعتراض. فكل كلام سمعته فإن كان حقا فصدق به، وإن كان باطلا أو كذبا و لم يكن متعلقا بأمر الدين، فاسكت عنه و الطعن في كلام الغير تارة يكون في لفظه بإظهار خلل فيه من جهة النحو أو من جهة اللغة أو من جهة العربية أو من جهة النظم و الترتيب بسوء تقديم أو تأخير. و ذلك يكون تارة من قصور المعرفة، و تارة يكون بطغيان اللسان. و كيفما كان فلا وجه لإظهار خلله و أما في المعنى فبأن يقول ليس كما تقول، و قد أخطأت فيه من وجه كذا و كذا و أما في قصده فممثل أن يقول هذا الكلام حق، و لكن ليس قصدك منه الحق، و إنما أنت فيه صاحب غرض. و ما يجري مجراه. و هذا الجنس إن جرى في مسألة علمية ربما خص باسم الجدل، و هو أيضا مذموم. بل الواجب السكوت أو السؤال في معرض الاستفادة لا على وجه العناد والنكارة أو التلطف في التعريف لا في معرض الطعن

(Al-mirah refers to objection to the speech of others by indicating a defect in it, either through pronouncing, in meaning, or intention of the speaker. Opposing the argument with negatively negating and offensive words should be avoided. If any speech you hear is proper, then believe it. If it is false, fake, and is not related to matters of religion, then keep quiet about it) (Islamweb, 2011). Individuals who employ the ‘Al-mirah’ during argumentation can value epistemic aims rather than getting enlightened with epistemic cognition on the particular topic of argumentation. ‘Al Mirah’ can also engender negative epistemic virtues like anger and frustration, which harm healthy cognition in epistemic matters.

Epistemic ideals

The researchers have propounded plenty of epistemic cognition models to date. We can broadly classify the most prominent models into developmental, multidimensional, and situated contextual-based. In their models of epistemic cognition, some researchers attribute the “naive” of those individuals who justify knowledge claims based on what they learn from authority figures. According to these researchers, “sophisticated” individ-

uals justify knowledge based on their means of rationality rather than depending on authority figures. (Hofer & Pintrich, 1997; King & Kitchener, 1994; Schommer, 1990). Contrary to multidimensional researchers' trivialising authority's role in knowledge, some researchers within the philosophical epistemology have pointed out the significance of authority figures in knowledge justifications. (P. K. Murphy et al., 2007).

The AIR Model of epistemic cognition is grounded in philosophical epistemology. We wondered whether theological reflections on epistemic cognition in argumentation practices differed in the degree to which they privileged different kinds of epistemic aims, values, ideals, and reliable processes and their prioritisation of different sources and authorities in reaching epistemic ends. Regarding supernatural things, a Muslim may use different epistemic ideals to justify the divine things as a believer. For example, theologians are believed to fit with the Quran, hadith, and the interpretations of four organised schools of thought in Islam as the epistemic ideal for anything related to a believer's life. At the same time, scientists treat fit with evidence and existing theories as their predominant epistemic ideal for justifying an explanation. There is an extensive tome for Imam al Juvaini, *al kafiyyathu fil jadal*, discussing the importance of healthy conversation and arguments in Islamic knowledge tradition.

والمراد بالنظر ههنا، فكر القلب وتأمله في حال المنظور، ليعرف حكمه جمعا وفرقا وتقسима
(The term *Nalar* refers to the contemplation and cognition of the heart in a cognitive task, and that *Nalar* (deep cognition) is meant to know Allah's *hukm* (judgement) in the world) (AL-Juvaini, n.d.). The cognition of the heart encompasses all kinds of cognition, including holistic, analytical and synthetical, thus contributing to internal consistency in cognition. According to the AIR Model of epistemic cognition, a successful cognition or explanation should be internally consistent (Chinn, 2014). The term *hukm* (judgement) can describe things, including the Islamic theological understandings and other things beyond theology, like natural sciences and other scientific matters. Around 750 verses in the Quran deal with natural phenomena (Ali, 2018). وحقيقة هذا النظر، هو التأمل، أو التفكير، أو التدبير، أو الاستدلال (The contemplation, ruminating, managerial thinking (what to do and how to do), considering alternative things to each other, and evidence-based thinking all encompass the reality of *Nalar* (the cognition)) (AL-Juvaini, n.d.). This holistic and analytic cognition of the individual ensures the integrity and robustness of the cognition. All these activities of the '*nalar*' ensure the strength of the explanatory ideals the individual engages in.

Reliable and unreliable processes

Islamic doctrines do not oppose the scientific explanations of natural experimental things per se. Suppose a believer meets a scientific explanation that explicitly contradicts any theological explanations on the same topic. This is the crucial point where a Muslim's epistemic cognition must be sophisticated. Supposedly, even if he finds the conclusion or knowledge reached by the science contains more weightage in terms of the authenticity on the particular matter, unlike the conclusion of the faith, the best reliable processes to decide on the topic can be the following:

▶ Instead of destructively criticising the scientific domain for proposing such an explanation, one should consider the methodological property and the radical openness of the science in any explanation it gives because religious and supernatural notions are out of the methodological sphere of the scientific domain. The science neither rejects nor accepts the supernatural notions per se (Scott, 1993).

▶ Islamic theology considers the Quran and the holy hadiths as the bedrock in formulating its framework. Likewise, science adheres to a method often known as "methodological naturalism." (Science and faith: Conflict or Mutual Enrichment?, 2016). It has established a group of reliable, valid, and testable rules by which it discovers objective and observable natural phenomena worldwide.

▶ Intellectually rectify the false notions of some people who claim that there is no importance for the reason (alaql) and the human senses to acquire epistemic ends in the faith; thus, faith is inferior to science and opposite to scientific practices.

▶ It can be invalidated by references from classical Islamic scholars, who have highlighted the significance of reason, intellect, and the human sense in acquiring any knowledge (religious or non-religious).

▶ Understanding that an instant emotional outburst against the scientific conclusion is an epistemic vice that is an unreliable process for any epistemic end. Emotional reactions may further strengthen the prejudices of enemies working to position science and faith at two extremes.

▶ Introspecting that a backlash may have occurred due to a lack of extensive reading and understanding of Islamic knowledge texts.

Science is not a prerogative domain of anyone, as some people label science according to their dogmatic worldviews. For example, some atheist scientists attempt to sanctify a science that undermines religion's very basics. (Science and faith: Conflict or Mutual Enrichment?, 2016)

Suppose someone possesses a reliable process like this, closely comprehending scientific and theological methodologies' core similarities and

differences. In that case, he can be said to be closer to achieving the sophisticated explanatory ideal. He will carry his contemplation to a more advanced level, thinking that sophisticated brainstorming on knowledge sources of religious authorities and science is needed to prove the credibility of the discussions that happened way back among Islamic intellectuals. It does not mean invalidating the scientific knowledge practices. It is the advanced cognitive endeavour to make the harmonious encounter of theological and scientific knowledge outcomes happen. Thus, instead of becoming violent with any scientific explanation that seems against religious text, he seriously contemplates the issue at hand. He understands during his contemplation that some scientific explanations are not specific; they can be differently analysed in the future if more evidence is found that invalidates the previous scientific explanations. This understanding will not lead him to blame science thoroughly; instead, he thinks of a better explanation that is compatible with religious texts.

A believer without more profound knowledge about the methodological bedrock of science and religion is often inclined to accept inaccurate epistemic ideals, utterly undermining science. Keeping science against religion is the selfish desire of some anti-religious people, eventually degrading religious principles among a larger audience worldwide. Some may try to provoke a believer by employing this seemingly opposing scientific explanation, creating an illusory impression that science can not go hand in hand with theological notions. The explanatory ideal of an ‘ideal’ believer in such a scenario should be a sophisticated one. As noted, the methodological bedrock of science and Islamic knowledge practices are dissimilar.

In addition, there are deliberate attempts by some to depict the knowledge practices of Islam as inferior and incompatible with the knowledge practices of science. (Science and faith: Conflict or Mutual Enrichment?, 2016).

Allah points out epistemic virtue’s relevance as a reliable process during an argument. .

ادْعُ إِلَى سَبِيلِ رَبِّكَ بِالْحُكْمِ وَالْمَوْعِظَةِ الْحَسَنَةِ ۗ وَجَادِلْهُمْ بِالَّتِي هِيَ أَحْسَنُ (Invite the people with beautiful wisdom and preaching, and argue with the people most graciously) (Quranksu, 2013c). Imam ibn Katheer says, interpreting the verse:

من احتاج منهم إلى مناظرة وجدال، فليكن بالوجه الحسن برفق ولين وحسن (Whoever wants an argument, let him have a good face, gentle and be kind) (Quranksu, 2013d). Imam sa’ad considers the Aql (the reason, intellect) as one of the prominent mediums for reaching epistemic ends.

واما العقل وهو قوة للنفس بها تستعد للعلوم والادراكات، وهو المعنى بقولهم: غريزة يتبعها العلم بالضروريات عند سلامة الآلات

The Aql means the ‘innate property of human being followed by the definite knowledge whenever the modalities of perception are sound (secured from a vulnerability which may hamper proper perception through sensory organs) (Sa‘d al-Dīn al-Taftāzānī, 2014). The particular statement has laid down the ‘soundness of the modalities of perception’ as the reliable process for reaching an epistemic end. Suppose someone engages with this faculty of the soul (al-aql). At the same time, he has distorted prejudicial beliefs about the discussion topic or is in negative emotions like anger and frustration. In that case, it can be inferred that the chances of attaining sophisticated knowledge are less.

قُلْ هَاتُوا بُرْهَانَكُمْ إِنْ كُنْتُمْ صَادِقِينَ

Allah commands the prophet to tell the opponents to produce evidence if the opponents speak the truth (in a particular context), indicating the significance of evidence in establishing a sophisticated argument. (Qurank-su, 2013e).

قال الطبري: طلب الدليل هنا يقضي إثبات النظر ويرد على من ينفيه Imam Tabari says interpreting the verse: the request for the evidence here means that one should submit evidence to support their cognition and respond to those who deny their cognition (Qurank-su, 2013f). Research shows that to examine the quality of an argument; one must make better inferences about the author and evaluate the argument’s logic and evidence, the argument’s credibility and various counterarguments. (P. Murphy et al., 2014).

Unnecessary verbatim in an argument is an unreliable process to reach a sophisticated epistemic end as it may bring about vagueness in the explanation.

ان الجويني ينبه دائما إلى أن تكون الإجابة على قد السؤال، والا تكون هناك أية زيادة إلا إذا كانت متعلقة بالسؤال وذلك من أجل ضبط المدافعة

Imam Juvaini warns about unnecessary additions in answer to a question during an argument; an additional answer in extra words can be given if they are related to the question to control the defense (AL-Juvaini, n.d.).

Conclusion

The current study has provided essential insights into how discussions on cognitions about epistemic matters were carried out in the classical Islamic texts in the light of the AIR Model of epistemic cognition. The Piety of Almighty is critical in repeatedly reminding believers to engage honestly

in epistemic-related honest cognitions. A thorough understanding of the methodological basis of science and religion also removes the barriers to engaging in sophisticated epistemic cognition. Epistemic cognition interventions can be designed employing explanations of argumentation and critical thinking in classical Islamic texts. Efforts should be made to extract the epistemic cognition elements in more classical texts and integrate those with contemporary epistemic cognition theories. Such an attempt will provide an opportunity for people to benefit from classical wisdom.

Bibliography

AL-Juvaini, I. (n.d.). $\tau\text{Π}\tau\text{□} \text{ c}\text{Y} \Delta\text{Θ}\text{Y}\text{YF}\tau\text{□} \text{ ΩY}\text{Θ}\zeta$.

Ali, S. (2018). Science and the Qur'an. The Qur'an: An Encyclopedia (PDF).

Bråten, I., Ferguson, L. E., Strømsø, H. I., & Anmarkrud, Ø. (2014). Students working with multiple conflicting documents on a scientific issue: Relations between epistemic cognition while reading and sourcing and argumentation in essays. *British Journal of Educational Psychology*, 84(1), 58–85. <https://doi.org/10.1111/bjep.12005>

Bråten, I., Gil, L., & Strømsø, H. (2011). The role of different task instructions and reader characteristics when learning from multiple expository texts. (pp. 95–122).

Chinn, C. A. (2014). Epistemic cognition and evaluating information: Applying the AIR model of epistemic cognition. 425–453.

Chinn, C. A., Rinehart, R. W., & Buckland, L. A. (2014). Epistemic Cognition and Evaluating Information : Applying the AIR Model of Epistemic Cognition In this chapter

, we elaborate a model of epistemic cognition and explain how this model can be applied to help account for how people evaluate information , in. Common Core State Standards Initiative. (2010). Common core state standards for English language arts, literacy in history, social studies, science, and Technical Subjects. Pennsylvania Department of Education, 66. http://www.corestandards.org/assets/CCSSI_ELA_Standards.pdf

Dorarnet. (n.d.-a). <https://dorar.net/hadith/sharh/64107>

Dorarnet. (n.d.-b). <https://dorar.net/hadith/sharh/118458>

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities.

Greene, J. A., Sandoval, W. A., & Bråten, I. (2016). Handbook of epistemic cognition. In *Handbook of Epistemic Cognition*. <https://doi.org/10.4324/9781315795225>

Greene, J. A., & Yu, S. B. (2015). Educating Critical Thinkers: The Role of Epistemic Cognition. *Policy Insights from the Behavioral and Brain*

- Sciences, 3(1), 45–53. <https://doi.org/10.1177/2372732215622223>
- HadeethEnc. (2022). <https://hadeethenc.com/ar/browse/hadith/4555>
- Herrenkohl, L. R., & Cornelius, L. (2013). Investigating Elementary Students' Scientific and Historical Argumentation. *Journal of the Learning Sciences*, 22(3), 413–461. <https://doi.org/10.1080/10508406.2013.799475>
- Hofer, B., & Pintrich, P. (1997). The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research*, 67. <https://doi.org/10.3102/00346543067001088>
- Iordanou, K., & Constantinou, C. P. (2015). Supporting use of evidence in argumentation through practice in argumentation and reflection in the context of SOCRATES learning environment. *Science Education*, 99(2), 282–311. <https://doi.org/10.1002/sc.21152>
- Islamweb. (2011). <https://www.islamweb.net/ar/fatwa/161573/KjIT7-Δ3Π7-ξAέ-cY-ZΘBA-εΘüí-Yε-KjΣ-κ3óυ>
- King, P. M., & Kitchener, K. S. (1994). Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults: Vol. null (null (Ed.)).
- Kuhn, D. (2008). *Education for Thinking*. Harvard University Press. <https://www.hup.harvard.edu/catalog.php?isbn=9780674027459>
- Kuhn, D., Hemberger, L., & Khait, V. (2014). *Argue with me: Argument as a path to developing students' thinking and writing*.
- Lai, E. (2011). *Critical thinking: A literature review*. Pearson's Res Rep, 6, 40–41.
- Manen, M. van. (1997). *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315421056>
- Mason, L., & Scirica, F. (2006). Prediction of students' argumentation skills about controversial topics by epistemological understanding. *Learning and Instruction*, 16(5), 492–509. <https://doi.org/10.1016/j.learninstruc.2006.09.007>
- Science and faith: Conflict or Mutual Enrichment?, (2016).
- Miterianifa, M. et al. (2021). Higher Order Thinking Skills in the 21st Century: Critical Thinking. *Proceedings of the 1st International Conference on Social Science, Humanities, Education and Society Development, ICONS 2020*. <https://doi.org/10.4108/eai.30-11-2020.2303766>
- Murphy, P. K., Alexander, P. A., Greene, J. A., & Edwards, M. N. (2007). Epistemological threads in the fabric of conceptual change research. In *Reframing the conceptual change approach in learning and instruction*.

(pp. 105–122). Elsevier Science.

Murphy, P., Rowe, M., Ramani, G., & Silverman, R. (2014). Promoting Critical-Analytic Thinking in Children and Adolescents at Home and in School. *Educational Psychology Review*, 26, 561–578. <https://doi.org/10.1007/s10648-014-9281-3>

National assessment of educational progress. (2013). <https://nces.ed.gov/nationsreportcard/>

Newell, G., Beach, R., Smith, J., & VanDerHeide, J. (2011). Teaching and Learning Argumentative Reading and Writing: A Review of Research. *Reading Research Quarterly*, 46, 273–304. <https://doi.org/10.1598/RRQ.46.3.4>

Nussbaum, E. M., Sinatra, G. M., & Poliquin, A.

(2008). Role of Epistemic Beliefs and Scientific Argumentation in Science Learning. *International Journal of Science Education*, 30(15), 1977–1999. <https://doi.org/10.1080/09500690701545919>

Quran. (2013). The E-Quran Project at King Saud University. <http://quran.ksu.edu.sa/tafseer/qortobi/sura2-aya111.html>

Quranksu. (2013a). King Saud University. <http://quran.ksu.edu.sa/tafseer/katheer/sura40-aya19.html>

Quranksu. (2013b). King Saud University. <http://quran.ksu.edu.sa/tafseer/tabary/sura43-aya58.html>

Quranksu. (2013c). King Saud University. <http://quran.ksu.edu.sa/tafseer/katheer/sura16-aya125.html>

Quranksu. (2013d). King Saud University. <https://quran.ksu.edu.sa/tafseer/katheer/sura16-aya125.html#katheer>.

Quranksu. (2013e). King Saud University. <http://quran.ksu.edu.sa/tafseer/tabary/sura2-aya111.html>

Quranksu. (2013f). King Saud University. <http://quran.ksu.edu.sa/tafseer/qortobi/sura2-aya111.html>

Saavedra, A., & Opfer, V. D. (2012). Learning 21st-Century Skills Requires 21st-Century Teaching. *The Phi Delta Kappan*, 94, 8–13. <https://doi.org/10.2307/41763587>

Sa‘d al-Dīn al-Taftāzānī. (2014). *Sharḥ al-‘Aqā‘id al-Nasafiyyah* (pp. 29–38).

Schommer, M. (1990). No Title. *Journal of Educational Psychology*, 82(null), 498.

Scott, E. C. (1993). Darwin Prosecuted: Review of Johnson’s Darwin on Trial. National Center for Science Education. <https://ncse.ngo/darwin-prosecuted-review-johnsons-darwin-trial>

Solomon, M. (2001). *Social Empiricism*. <https://mitpress.mit.edu/books/social-empiricism>

- Thagard, P. (2012). *The Cognitive Science of Science Explanation, Discovery, and Conceptual Change*. <https://mitpress.mit.edu/books/cognitive-science-science>
- Wei, L., Firetto, C. M., Duke, R. F., Greene, J. A., & Murphy, P. K. (2021). High school students' epistemic cognition and argumentation practices during small-group quality talk discussions in science. *Education Sciences*, 11(10). <https://doi.org/10.3390/educsci11100616>
- Weinstock, M. (2011). Knowledge-telling and knowledge-transforming arguments in mock jurors' verdict justifications. *Thinking & Reasoning*, 17(3), 282–314. <https://doi.org/10.1080/13546783.2011.575191>
- Weinstock, M. P. (2005). Cognitive Bases for Effective Participation in Democratic Institutions: Argument Skill and Juror Reasoning. *Theory & Research in Social Education*, 33(1), 73–102. <https://doi.org/10.1080/00933104.2005.10473272>
- Zagzebski, L. T. (1996). *Virtues of the mind: Vol. null (null (Ed.))*.